KALASHNIKOV, S.N.; KOGAN, G.I.; KOZLOVSKIY, I.S.; KORZINKIN, V.I.;
    MARKOV, N.N.; SYROYEGIN, A.A.; TAYTS, B.A., prof., coktor
    tekhn. nauk, red.; TROFIMOVA, Ye.I., kand. tekhr. nauk,
    retsenzent; IVANOVA, N.A., red.izd-va; EL'KIND. V.D.,
    tekhn. red.

[Manufacture of gear wheels] Proizvodstvo zubchatykh koles;
spravochnik. [By] S.N.Kalashnikov i dr. Moskva, Mashgiz,
1963. 683 p.   (MIRA 16:12)
                    (Gearing)

MARKOV, N.N.; KAYNER, G.B.; SATSERDOTOV, P.A.

Effect of temperature on the errors of measurements. Izm.tekh.
no.11:5-9 N '63. (MIRA 16:12)

ACCESSION NR: AP4034525   S/0028/64/000/003/0021/0023

AUTHOR: Markov, N. N.; Kayner, G. B.

TITLE: Measurement error standardization for active control and pickup devices

SOURCE: Standartizatsiya, no. 3, 1964, 21-23

TOPIC TAGS: automatic measurement device, active control device, measurement error, measurement error standardization, clinometor, testing method

ABSTRACT: Lack of adequate measurement error standards for active control devices and other automatic measuring devices stems from the difficulty of separating device measurement error from machine error. Reliable measuring instruments are needed to establish measurement error standards and to develop effective testing methods. Clinometers and instruments of that type have proven to be the most reliable, ensuring measurement to 0.1 micron under static conditions. Special test stands to simulate machine operation without error are needed to separate device error from machine error. With improved testing

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ACCESSION NR: AP4034525

gauges and development of their production, measurement error
standards can be established and testing methods adopted for regular
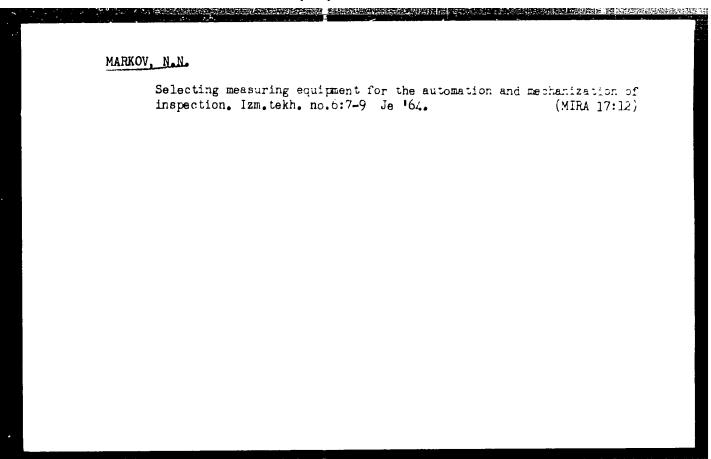inspections of active control devices in the various plants. Orig.
art. has: None

ASSOCIATION: None

SUBMITTED: 00   ENCL: 00   SUB CODE: LS

NR REF SOV: 000   OTHER: 000

Card 2/2

MARKOV, N.N.

Selecting measuring equipment for the automation and mechanization of inspection. Izm.tekh. no.6:7-9 Je '64.   (MIRA 17:12)

L 19718-65   EWT(d)/EEC(k)-2/EEC-4   Po-4/Pq-4/Pg-4/Pk-4/Pl-4   BSD/AFWL/ASD(a)-5
ACCESSION NR: AP4049776   S/0028/64/000/009/0029/0033

AUTHORS: Markov, N. N.; Kayner, G. V.

TITLE: Standardization of parameters of devices for linear and angular measurements

SOURCE: Standardizatsiya, no. 9, 1964, 29-33

TOPIC TAGS: quality control, precision instrument design, instrumentation, measuring instrument

ABSTRACT: Errors associated with measuring devices were classified into two types: 1) errors of the mechanism; 2) errors through readings. A mechanism error, in the general case, is equal to the error at the end of a measurement minus that at the beginning of a measurement. If the beginning of a reading always corresponds with a zero initial scale reading, then the curve of error distribution of instrument readings under control testing is, at the same time, the curve of error distribution of instrument readings during measurement. On the other hand, when the beginning of measurement readings does not correspond with the beginning of check readings, then the instrument error must be computed as a function of δ_1, an assumed variation. The limiting error is $\delta_{lim} = \pm 1.4\delta_1$,

Card 1/2

L 19718-65

ACCESSION NR: AP4049776

2

When δ_1 is normalized over $\pm \delta_1$ or $\pm 2\delta_1$. The authors describe a method of determining an instrument error function based upon random sampling; an example is given for micrometers from the factory Kalibr. The establishing of a functional basis for all Soviet manufacture of measuring instruments is in progress under the supervision of the Vsesoyuzny*y nauchno-issledovatel'skiy institut Gosudarstvennogo komiteta standartov, mer i izmeritel'ny*kh priborov SSSR (VNIIGK) (All-Union Scientific Research Institute of the State Committee on Standards, Measures, and Measuring Devices of the USSR). Variations arising from instability of measuring gauges were also discussed, along with the questions of establishing sensitivity norms and thresholds of precision. Sensitivity characteristics of several measuring attachments are shown in a table. The authors conclude that current means of defining error characteristics of measuring devices are not in keeping with consumer requirements. The following, in the authors' opinion, must be quantified for measuring devices: limiting systematic error, sensitivity within scale division limits, limiting random error, and error of reverse motion in the limits of scale division. Orig. art. has: 1 table.

ASSOCIATION: none

SUBMITTED: 00

SUB CODE: IE   NO REF SOV: 001   ENCL: 00
                                                                      OTHER: 000
Card 2/2

VERKHOTUROV, B.Ya.; MARKOV, N.N.

Device for checking the kinematic precision of mechanisms. Stan.i
instr. 35 no.9:21-24 S '64. (MIRA 17:10)

MARKOV, Nikolay Nikolayevich; FIRUN, M.B., red.

[Measuring devices for checking gear wheels and worms]
Izmeritel'nye sredstva dlia kontrolia zubchatykh koles i
cherviakov. Leningrad, 1965. 43 p.   (MIRA 18:7)

MARKOV, N.N.; TAYTS, B.A., doktor tekhn. nauk, . . .,
TUCHKOVA, L.K., inzh., ret.

[Gear-tooth measuring instruments; foreign experience]
Zuboizmeritel'nye pribory; inostrannyi opyt. Moskva,
Mashinostroenie, 1965. 165 p.   (MIRA 18:5)

MARKOV, N.N.; POTAPOV, V.P

Geology and oil potentials of the Yarino-Kamennolozhskoye
deposit in Perm Province. Trudy VNIGNI no.36:60-69 '63.

GALKIN, V.I.; MARKOV, N.N.

Auger core drilling without lifting the auger string. Trudy TsVB
no.5:82-87 '62.   (MIRA 18:7)

MARKOV, Nikolay Nikolayevich; MAKAROVA, E.A., red.; KOROBOVA, N.D.,
  tekhn. red.

[Wages in the textile industry enterprises]Oplata truda na
predpriiatiiakh tekstil'noi promyshlennosti. Moskva, Profizdat,
1962. 222 p.   (MIRA 16:3)
            (Wages--Textile workers)

FILEV, D.S.; MARKOV, N.P., aspirant

Corn as postharvest crop in the Ukrainian steppe. Zhivotnovodstvo
21 no.6:64-66 Je '59.   (MIRA 12:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut kukuruzy (for
Markov). 2. Chlen-korrespondent Vsesoyuznoy akademii sel'skokhozyay-
stvennykh nauk im. Lenina (for Filev),
                        (Ukraine--Corn (Maize))

MARKOV, N. V.
25746

O Sortovoy Agrotekhnike Sliry V. Usloviyakh
Alma - Ata. Sad I Ogorod, Iss.,
No. 7, S. 25027

SO: LETOPIS NO. 30, 1948

MARKOV, N.V

USSR/Cultivated Plants.   Fruits. Berries.   M

Abs Jour : Ref Zhur - Biol., No 8, 1958, No 34810

Author   : Markov N.V.
Inst   : Institute of Agriculture of Kazakhstan, Branch VASKENIL.
Title   : Summary of Plans For Raising New Breeds of Prune Trees in
           the Zone of the Alma-Ata Fruit Cultures

Orig Pub : Tr. In-ta zemledely Kazakhst. fil. VASHHNIL, 1956, 5,
           57-74

Abstract : The expansion of prune tree cultivation in this zone was
           delayed by lack of dependable and tested varieties. In 1933-
           1937, a series of crossings of a number of the best varieties
           with the most highly resistent traits was carried out by
           the Institute for Agriculture. Breeding of hybrids was con-
           ducted under severe test conditions. Cited are data showing
           the predominance of hereditary morphological symptoms in
           hybrids at the onset of their fruit-bearing stage. Pecu-
           liarities concommitant to the transmission in certain

Card   : 1/2

100

MARKOV, Nikolay Var...

Lipetsk;
Lipetsk, L...

MARKOV, Nikolay Vasil'yevich, kand. fil. nauk; BIKKENIN, N.B., kand. filos. nauk, red.; BERLIN, S.G., red.; MARAKASOVA, L.P., tekhn. red.

[Physical and intellectual work under communism]Fizicheskii i umstvennyi trud pri kommunizme. Moskva, Izd-vo "Sovetskaia Rossiia," 1962. 187 p.   (MIRA 15:11)
        (Work) (Labor and laboring classes)

MARKOV, N.V.; MELKUMYAN, M.I., red.

[The role of technological progress in the creation of
the material and technological foundation of communism;
an aid for students of correspondence and evening schools
studying the materials of the 22d Congress of the CPSU]
Rol' tekhnicheskogo progressa v sozdanii material'no-
tekhnicheskoi bazy kommunizma; v pomoshch' studentam za-
ochnogo i vechernego obucheniia, izuchaiushchim materialy
XXII s"ezda KPSS, [n.p.] "Vysshaia shkola," 1964. 64 p.
                                            (MIRA 17:5)

TIMOFEYEV, N.S.; MARKOV, O.A.; BELORUSSOV, V.O.

Determining the index of the anisotropy of rocks taking into account
the orientation of the well bore. Neft.khoz. 41 no.10:22-26
O '63.   (MIRA 17:4)

L 3835-66   ARG/EWT(d)/FBD/FBG/EWT(m)/EWP(w)/EPF(c)/FA/EWP(c)/EWP(v)/T-2/EWP(k)/
             LWP(h)/FCS(k)/EWA(h)/ETC(m)   WW/EM/WE
AM5025577   BOOK EXPLOITATION   UR/
                                                                 355.9
                                                                 A49

Aleshkov, M. N. (Candidate of Technical Sciences, Engineer-Colonel); Vyakubov,
   B. R. (Engineer-Colonel); Zhukov, I. I. (Professor, Doctor of Technical
   Sciences, General Major of the I.T.S.); Katkhanov, M. N. (Doctor of Technical
   Sciences, Docent Engineer-Colonel); Kukushkin, D. D. (Candidate of Technical
   Sciences, Colonel); Markov, O. P. (Docent, Candidate of Technical Sciences,
   Engineer-Lieutenant Colonel); Savin, N. V. (Engineer-Colonel); Smirnov, A. D.
   (Engineer-Colonel); Fomin, YU. G. (Candidate of Technical Sciences, Engineer-
   Colonel)

Physical principles of rocket weapons (Fizicheskiye osnovy raketnogo oruzhiya)
   Moscow, Voyenizdat M-va obor. SSSR, 1965. 463 p. illus., biblio. 12,000
   copies printed.

TOPIC TAGS: rocket, rocket flight, weapon, projected ammunition, jet engine,
   rocket propellant, combustion chamber, engine fuel system, rocket guidance,
   missile ground equipment, rocket engine test, jet propulsion

PURPOSE AND COVERAGE: The book presents the principles of the theory of flight,
   the physical principles of jet propulsion, describes rocket engines and fuels,
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AN5025577

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and control and guidance systems of various types. It also describes the
working principle of rockets of various types and their basic equipment, and
the designs of ground equipment and the tests of rocket complexes. It also
contains a classification of rocket equipment. The book is intended for
officers connected with the manufacture of rocket equipment, and for students
of military educational institutions. The contents of the book is based on
materials of overt Soviet and foreign publications.

TABLE OF CONTENTS (abridged):

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AM5025577

Ch. IX.   Ground equipment of various purpose rocket complexes — 385
Ch. X.   Rocket and rocket complex tests — 407
Ch. XI.   Rocket combat units — 427

Bibliography — 459

SUB CODE: GM, MA   SUBMITTED: 30Mar65

NO REF SOV: 035   OTHER: 042

Card 3/3

MARKOV P

IVANOV, Chr. [Ivanov, Khr.]; MARKOV, P.

Reduction of organic compounds with magnesium, or zinc in liquid ammonia. Doklady BAN 15 no.1:49-52 '62.

1. Lehrstuhl für organische Chemie an der Universität, Sofia. Vorgelegt von Akademiemitglied.

BALABANOV, S.; DRAGHEV, T.; MARKOV, P.; NANEV, K.

    Third National Conference on Physics. Fiz mat spisanie BAN
    7 no.3:226-229 '64.

KARAMISHEV, Iv.; MARKOV, P.

Experience of the surgical ward of the regional hospital in
Plaven in the treatment of burns. Khirurgiia 15 no.9/10:
809-810 '62.

(BURNS)

ZLATEVA, A.; MARKOV, P.; TODOROV, T.; CHERNEV, Kh.

Elastic π —meson scattering at a pulse of 4.0 Bev./c on protons.
Doklady BAN 16   nc.6:581-583 '63.

1. Fizicheskiy institut s ANEB pri BAN. Predstavleno akad. G.
Nadzhakovym, chlenom Redaktsionnoy kollegii, "Doklady bolgarskoy
Akademii nauk".

CHERNAVSKIY, V.P., kand.tekhn.nauk; MARKOV, P.I., inzh.

New tamping machine. Stroi. i dor.mashinostr. 4 no.3:22-24
Mr '59.   (MIRA 12:4)
                        (Road machinery)

14(9)

SOV/112-59-2-2644

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1959, Nr 2, p 52 (USSR)

AUTHOR: Markov, P. I.

TITLE: Analysis of the Longitudinal Profile of the Kola-Peninsula Rivers for Evaluating Their Potential Capacities (Analiz prodol'nogo profilya rek Kol'skogo poluostrova v svyazi s uchetom ikh potentsial'noy moshchnosti)

PERIODICAL: Izv. vost. fil. AN SSSR, 1957, Nr 11, pp 109-115

ABSTRACT: An analysis of the complicated profile of the Ponoy River and its tributaries shows that the type of longitudinal profile has a determining influence upon the magnitude of the relative river capacity. It is suggested that, in evaluating water-power resources, the peculiarities of longitudinal profiles be considered as a basis for area classification under complicated orographic conditions. Profiles of the Kola-Peninsula rivers and their energy characteristics are presented. Bibliography: 4 items.

A.P.T.

Card 1/1

MARKOV, P.I.

Distribution of potential power resources in a river basin. Izv.
Kar. i Kol'.fil.AN SSSR no.4:71-75 '58.   (MIRA 12:5)

1. Otdel gidrologii i gidroenergetiki Kol'skogo filiala AN SSSR.
                    (Water power)

MARKOV, Petr Ivanovich; GRIGOR'YEV, S.V., kand.tekhn.nauk, zasluzhennyy deyatel'
    nauki i tekhniki Kol'skoy ASSR, otv.red.; ARON, G.M., red.izd-va;
    BLEYKH, E.Yu., tekhn.red.

[Methods for calculating and analyzing water-power resources of
the Kola Peninsula] Metodika ucheta i analiz gidroenergeticheskikh
resursov Kol'skogo poluostrova. Moskva, Izd-vo Akad.nauk SSSR,
1959. 92 p.   (MIRA 12:6)
          (Kola Peninsula--Water power)

MARKOV, Petr Ivanovich; BYDIN, F.I., doktor tekhn. nauk, otv. red.

[Potential hydroelectric power resources of river basins]
Potentsial'nye gidroenergeticheskie resursy rechnykh bas-
seinov. Moskva, Nauka, 1964. 112 p.   (MIRA 17:9)

MARKOV, P.

   Conference on Scientific-Technical Standardization in the Furniture Industry. Leka Promishlenost (Light Industry), #12:36:Dec. 1954

MARKOV, P.

"Mimoza," a New Fabric of a Czechoslovak Textile Factory. Leka Promishlenost
(Light Industry), #12:37:Dec. 1954

MARKOV, P.

138,000 Meter Fabric Manufactured from Economized Material. Leka
Promishlenost (Light Industry), #12:37:Dec. 1954

MARKOV, P.

Annotations. Leka Promishlenost (Light Industry), #12:38:Dec. 1954

MARKOV, P.

    Device for gluing paper when pressing veneer sheets together. p. 38.
    LEKA PROMISHLENOST, Sofiya, Vol. 4, no. 1, 1955.

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, no. 10, Oct. 1955,
    Uncl.

KIRILLOVA, L.F.; NIKITIN, V.A.; PANTUYEV, V.S.; SVIRIDOV, V.A.; STRUNOV, L.N.;
    KHACHATURYAN, M.N.; KHRISTOV, L.G.; SHAFRANOVA, M.G.; KORBEL, Z.; ROB,L.;
    DAMYANOV, S.; ZLATEVA, A.; ZLATANOV, Z.; YORDANOV, V. [Iordanov,V.];
    KANAZIRSKI, Kh.; MARKOV, P.; TODOROV, T.; CHERNEV, Kh.; DALKHAZHAV, N.;
    TUVDENDORZH, D.

Elastic pp and pd-scattering at small angles in the energy range
2 - 10 Bev. IAd. fiz. 1 no.3:533-539 Mr '65.   (MIRA 18:5)

1. Ob"yedinennyy institut yadernykh issledovaniy. 2. Vyssheye
tekhnicheskoye uchilishche, Praga (for Korbel, Rob). 3. Fizicheskiy
institut Bolgarskoy Akademii nauk, Sofiya (for Damyanov, Zlateva,
Zlatanov, Yordanov, Kanazirski, Markov, Todorov, Chernev). 4. Institut
khimii i fiziki, Ulan-Bator, Mongol'sakaya Narodnaya Respublika (for
Dalkhazhav, Tuvdendorzh).

L 29695-66

ACC NR: AP6020853   SOURCE CODE: BU/0016/65/000/008/0485/0485

AUTHOR: Markov, P.   15

ORG: none   B

TITLE: Case of intestinal pneumatosis

SOURCE: Suvremenna meditsina, no. 8, 1965, 485

TOPIC TAGS: intestinal disease, pathogenesis

ABSTRACT: In a child, intestinal pneumatosis is virtually always of infectious origin; in the adult, of mechanical origin. A generalized condition seen recently in a 25-day-old infant and terminating fatally is described. /JPRS/

SUB CODE: 06 / SUBM DATE: 00Mar65

Card 1/1   cc

MARKOV, P.

Markov, P., Vranski, V., Feeva, A.   "The Penetration of Daylight into Stalin Lake."
p. 147   (GODISHNIK, MATEMATIKA I FIZIKA, Vol. 47, no. 1, pt. 2, 1950/51-1951/52,
Sofiya.)

SO: MONTHLY LIST of East European Accessions, Vol. 3, No. 3, Library of Congress,
March ~~1953~~ 1954, Uncl.

MARKOV, P.; KERACHEV, P.

Electric thermoanemometer with spiral wire. p. 105. (GODISHNIK. MATEMATIKA I FIZIKA. Vol. 49, No. 1, 1954/55 (published 1956), Sofia, Bulgaria`

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, No. 9, Sep 1957. Uncl.

AUTHORS: Bogachev, N. P., Van Shu-Fen'. Gramenitskiy, I. M.,
Kirillova, L. F., Lebedev, R. M., Lyubimov, V. B.,
Markov, P. K,, Merekov, Yu. P., Podgoretskiy, M. I.,
Sidorov, V. M., Tolstov, K. D., Shafranova, M. G.

TITLE: The Interaction of 9 Bev Protons with Nuclei in Photo-Emulsion
(Vzaimodeystviye protonov s energiyey 9 Bev s yadrami foto-
emul'sii).

PERIODICAL: Atomnaya Energiya, 1958, Vol. 4, Nr 3, pp/ 281-284 (USSR)

ABSTRACT: The photoemulsion HИ K◆И-P witha layer of about 450 μ was
irraidated with protons within and out of the vacuum chamber
of the 9 Bev synchrophasotron. The mean range of 9 Bev pro-
tons for an interaction is $34,7 \pm 1,5$ cm. (The scattering
for angles below 5° was not taken into account)
258 cases of a nuclear interaction were observed. The mean
number of fast particles n generated in a process of inter-
action amounts to $3,4 \pm 0,7$. The angular distribution of
these particles shows a clearly preferred forward motion. The
mean number of black and grey traces N_n - the recoil nuclei
not being considered - is $8,3 \pm 0,5$.

From 249 found stars 18 can be considered to constitute an
interaction of the initial protons with "Free" or "quasi-

free" protons.
13 stars can be considered to represent an interaction between protons and "quasifree" neutrons. All of them have an odd number of traces. and in the point of formation of the star β-traces can be observed. The mean number of fast particles in these 13 star traces is $3,1 \pm 0,3$. There are 5 figures, 1 table, and 7 references, 1 of which is Slavic.

MARKOV, P.K.

2? (0)
AUTHORS:
Darashenkov, V. S., Belyakov, V. L.,   SOV/89-7-4-12/28
Van Shu-fen', Glagolev, V. V., Dolkhazher, N., Kirillova, L. F.,
Lebedev, R. M., Mel'tser, V. M., Markov, P. K., Tolstov, K. D.,
Voronov, B. N., Shafranova, M. G.

TITLE:
The Interaction of Fast Nucleons With Nuclei of the Photo-
emulsion NIKFI-R

PERIODICAL:
Atomnaya energiya, 1959, Vol 7, Nr 6, pp 576-577 (USSR)

ABSTRACT:
The present paper deals with the interaction between 9 Bev-
protons, which were accelerated in the beam of the synchro-
phasotron of the Ob"yedinennyy institut yadernykh issledovaniy
(Joint Institute of Nuclear Research), and the nuclei of a
photoemulsion of the NIKFI-R type. The results of these
measurements are shown by a table. On the basis of the data
thus found it is possible to draw several conclusions as to
the mechanism of the interaction between a fast proton and a
nucleus. If the primary nucleon-nucleus collision is of
interaction between nucleon and channel, the velocity of the
center of mass in an interaction of silver and bromine with
the channel will be considerably less than in an interaction
with light nuclei. Therefore, also the number of α-particles

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must be considerably greater. In the experiment, the numbers
of α-particles for light and heavy nuclei are, however, nearly
the same. This is explainable on the basis of the cascade
mechanism of interaction, in which the energy of the α-particles
decreases rapidly in cascade collisions. The multiplicity of
the particles produced decreases simultaneously. In the case
of the greater number of α-particles, nucleons are observed,
which may be explained by the cascade mechanism of nucleon-
nucleus interaction. Also the agreement between the transversal
momentum $P_{\perp}$, for α-protons originating from interaction with
light and heavy nuclei points in the direction of the inter-
action cascade mechanism. Besides, a search was made for
strange particles by employing the method of investigating
α-particles with an energy of E < 140 Mev La + medium-
weight nuclei of the photoemulsion amounts to

(5 ± 2)10⁻²⁷ cm². Besides, the amount of the production cross
section, the wide angular distribution of the K-mesons, as
well as other facts indicate that a noticeable fraction of

Card 2/3

slow strange particles is produced in an intranuclear cascade
process. Furthermore, the medium-weight energy losses of a
fast nucleon are evaluated in the case of a single nucleon-
nucleon collision. A 9Bev-proton gives up an average of
(5.1 ± 0.6) Bev to a medium-weight nucleus of the photoemulsion,
which amounts to (60 ± 10)% of its initial energy. 40% Bev
are used for the production of pions, and 1.05 Bev are trans-
ferred to the nucleons of the nucleus. As a proton in an medium-
weight nucleus undergoes approximately 2 collisions, the proton,
in one single nucleon-nucleus collision, loses ΔE = 4½ x 10⁴
of its initial energy. By means of other measurements of the
pion energy spectrum carried out independently of the present
paper in a nucleon-nucleus collision ΔE = 40 ± 10 % is obtained.
The statistical theory of multiple production furnishes
ΔE = (40 - 90)%. The authors thank G. Bernasekikh, V. Tsatiin,
S. Kanarzova, and K. Metkin for their help in the measurements,
and L. Popova for his assistance in analysing measuring results.
There are 1 table and 1 reference.

Card 3/3

SOV/56-37-3-4/62

21(7)
AUTHORS: Zhdanov, G. B., Markov, P. K., Strel'tsov, V. N., Tret'yakova,
M. I.,Cheng P'u-ying, Shafranova, M. G.

TITLE: Secondary Stars Occurring in the Interaction of Protons With
Energies of 8.7 Bev With Photographic Emulsion Nuclei

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959,
Vol 37, Nr 3(9), pp 611 - 615 (USSR)

ABSTRACT: In collisions between high energy nucleons and nucleons or
nuclei the investigation of the energy distribution between the
secondary nucleons and the pions is of special interest;Gri-
gorov (Ref 1) found that at primary energies of between 3 and
40 Bev up to 70% of this energy is transferred, Belyakov et al
(Ref 2) and Bayatyan et al (Ref 3) investigated the inter-
action between 9 Bev protons and photoemulsion nuclei, and deter-
mined the energy carried away by fast pions as amounting to
20-40% and those carried away by a fast nucleon as (40±20)%.
It was the aim of the present paper to evaluate the energy of
the fast nucleons and pions produced by the interaction of
Card 1/3   8.7 Bev protons with photographic emulsion nuclei. An emulsion

Secondary Stars Occurring in the Interaction of Protons   SOV/56-57-3-4/62
With Energies of 8.7 Bev With Photographic Emulsion Nuclei

pile (NIKFI-R) consisting of 100 layers was irradiated in
the synchrocyclotron with 8.7 Bev protons. Such stars are
described as secondary, as show no track of a fast particle
with an angle between 178 and 180° (with respect to the track
of the primary protons) in the emulsion plane. The following
results were obtained by these investigations: 1) 0.68±0.07
fast neutrons ($E_n >$ 500 Mev) were found per star; their average

energy was about (3.5±0.5)Bev. 2) On the assumption that the
numbers of fast protons and neutrons (referred to a star) and
their average energy are equal, (55±9)% of the energy of primary
particles is carried away by fast nucleons. 3) The average
number of fast pions ($E_\pi >$ 80 Mev), including the neutral pions,

amounts per interaction to 3.8±0.3. Their average total energy
is (0.8±0.2)Bev. 4) An analysis of the angular distributions
of the tertiary charged particles in secondary stars indicates
that among the secondary particles flying away under an angle
$\leqslant$ 10° (to the direction of the primary protons) there are about
80% nucleons. The angular distribution for neutrons and fast
Card 2/3   particles is shown by figure 3. The authors thank M. Ya. Danysh.

Secondary Stars Occurring in the Interaction of Protons   SOV/ ....
With Energies of 8.7 Bev With Photographic Emulsion Nuclei

M. I. Podgoretskiy and I. L. Rozental' for discussions.
There are 3 figures, 1 table, and 5 references, ... which
are Soviet.

ASSOCIATION: Ob'yedinennyy institut yadernykh issledovaniy (Joint Institute
of Nuclear Research)

SUBMITTED: March 23, 1959

Card 3/3

LYUBIMOV, V.B.; MARKOV, P.K.; TSYGANOV, E.N.; CHZHEN PU-IN [Cheng P'u-ying]
SHAFRANOVA, M.G.

Elastic scattering of a proton on a proton at an energy of
8.5 BeV. Zhur.eksp.i teor.fiz. 37 no.4:910-916 O '59.
(MIRA 13:5)

1. Ob"yedinennyy institut yadernykh issledovaniy.
(Protons--Scattering)

83583
S/056/60/038/005/016/050
B006/B070

24.6600

AUTHORS: Markov, P. K., Tsyganov, E. N., Shafranova, M. G.,
            Shakhbazyan, B. A.

TITLE: Investigation of Elastic Proton-Proton Scattering *19* for an
            Energy of 8.5 Bev

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960,
            Vol. 38, No. 5, pp. 1471-1475

TEXT: The authors studied elastic proton-proton scattering by means of a
chamber $(10 \cdot 10 \cdot 2 \text{ cm}^3)$ consisting of emulsion layers of the type НИКФИ -БР
(NIKFI-BR) (400μ). The 8.5 Bev protons were obtained from the proton
synchrotron of the OIYaI. The proton beam was incident on the emulsion
surface perpendicularly. The emulsion contained $(2.90 \pm 0.06) \cdot 10^{22}$
hydrogen atoms per cm^3. An immersion objective of magnifying power 630
was used for evaluation. In the central part of the layer $(2 \cdot 2 \text{ cm}^2)$,   X
the flux density was $(1.97 \pm 0.05) \cdot 10^5$ particles/cm^2. 3.35 cm^3 of the
emulsion were studied in all. For the (double) evaluation, those two-
pronged stars were selected which indicated elastic pp-scattering. Their

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Investigation of Elastic Proton-Proton Scat-   S/056/60/038/005/016/050
tering for an Energy of 8.5 Bev   B006/B070

number was 799. According to the range of the slow proton, they wer=
divided into three groups : 1) $10\mu \leq R < 100\mu$; 2) $100\mu \leq R < 20,000\mu$; and
3) $R > 20,000\mu$. The tracks of the first two groups were practically
black on account of the high sensitivity of the emulsion. The efficiency
of twofold evaluation for the different groups was $(85\pm3)\%$, $(92.5\pm0.8)\%$,
and $(78\pm5)\%$. 145 events of elastic proton scattering on free hydrogen
were selected according to criteria discussed here. The results of the
analyses of these stars are shown in Figs. 1-3. Fig. 1 shows the number N
of observed events as a function of $|\Delta\psi|$. $\Delta\psi$ is the difference between the
measured emission angle of the recoil proton and the angle that would
correspond to its path according to the kinematics of elastic scattering
Fig. 2 shows N as a function of $\Gamma = |\gamma /\Delta\gamma|$, where γ is the non-coplanarity
angle, and $\Delta\gamma$ the error in its measurement. Fig. 3 shows N as a function
of $|\Delta\psi|$. Here, N denotes those cases which were selected according to the
first two criteria (R - ψ relation and coplanarity); $\Delta\psi$ is the difference
between the angle of the scattered proton and the angle of the path of the
recoil proton according to the kinematics of elastic scattering. The
elastic scattering cross section was found to be σ_{e} · (8.6 ± 0.8) mb
after various corrections had been made. Fig. 4 shows the histograms of

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Investigation of Elastic Proton-Proton Scat-   S/056/60/038/005/016/050
tering for an Energy of 8.5 Bev   B006/B070

the reduced differential pp-scattering cross sections in the center-of-mass
system. The theoretical function $d\sigma/d\Omega = f(\psi)$ obtained according to the
model of a purely absorbing disk (radius of the disk: $0.94 \cdot 10^{-13}$cm), does
not represent the experimental results. Nor can this be achieved with
other models of purely absorbing protons. The model of a homogeneous,
semi-permeable sphere (Curves 2 and 3) is best suited for the description
of the experimental results if the refractive index is assumed to be
different from unity. The model parameters that appear to be most suitable
are given. The authors thank D. I. Blokhintsev, V. I. Veksler, M. Danysh,
M. I. Podgoretskiy, I. Ya. Pomeranchuk, Ya. A. Smorodinskiy, and K. D.
Tolstov for discussions; the assistants of the LVE (High-energy
Laboratory) of the OIYaI for the evaluation of the emulsion; L. G. Popova,
V. A. Nikitin, and V. A. Sviridov for their help and the operation of the
electronic computer "Ypal" ("Ural") of the LTF OIYaI; and T.F.Grabovskaya
and O. A. Ignatenko for evaluations and measurements. B. A. Shakhbazyan
is mentioned. There are 4 figures and 9 references: 4 Soviet and 5 US.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint
              Institute of Nuclear Research)

Card 3/4

83583

Investigation of Elastic Proton-Proton Scat-
tering for an Energy of 8.5 Bev

S/056/60/038/005/016/050
B006/B070

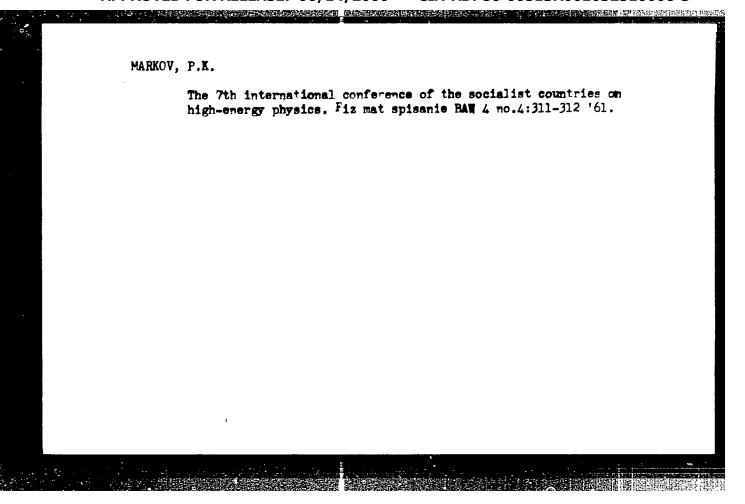SUBMITTED: December 31, 1959

Card 4/4

DO IN SEB; KIRILLOVA, L.F.; MARKOV, P.K.; POPOVA, L.G.; SILIN, I.N.;
TSYGANOV, E.N.; SHAFRANOVA, M.G.; SHAKHBAZYAN, B.A.; YULDASHEV, A.A.

[Proton-proton scattering at an energy of 8.5 Bev] Rasseyaniye
protona na protone pri energii 8,5 Bev. Dubna, Ob"edinennyi in-t
iadernykh issledovanii, 1961. 17 p.   (MIRA 14:12)

1. Fiziko-tekhnicheskiy institut AN Uzbekskoy SSR (for Yuldashev).
            (Protons--Scattering)

MARKOV, P. K.

The Tenth Session of the Scientific Council of the United Institute
of Nuclear Research in Dubna, SSSR. Fiz mat spisanie BAN 4 no.3:
234-237 '61.

MARKOV, P.K.

The 7th international conference of the socialist countries on
high-energy physics. Fiz mat spisanie BAN 4 no.4:311-312 '61.

MARKOV, P.K.

The 7th international conference of the socialist countries
on the physics of high energies. Spisanie BAN 6 no.4:86-93
'61.

AUTHORS: Zlateva, A. I., Markov, P. K., Peyeva, A. T., Khristov, L. G.,
Chernev, Kh. M.

TITLE: Elastic proton-proton scattering under small angles at 6.2-Bev
energy

TEXT: Elastic p-p scattering at 6.2-Bev energy under angles of 1°.2 -
11°.5 in the center-of-mass system has been studied using a photoemulsion chamber
irradiated by the internal proton beam of the ОИЯИ (OIYaI) proton synchrotron.
An irradiation geometry has been used, in which the incident flux is perpendi-
cular to the plane of the emulsion layers. This experimental arrangement permits
the efficient recording of p-p scattering down to very small angles, and a
reliable singling out of background events. In all, 141 cases of elastic p-p
scattering have been singled out. The results are compared with the differential
section under zero angle, calculated by the optical theorem using the full sec-

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Elastic proton-proton scattering...   S/058/62/000/006/112/135
                                                       A061/A101

tion of p-p interaction. Conclusions on the presence of a real part in the
scattering amplitude or on its dependence on the spin state will be possible
only after the statistical basis has been extended.

[Abstracter's note: Complete translation]

Card 2/2

MARKOV, P. K.; VODENICHAROV, Khr. M.

Heat release with free convection of two parallel wires. Doklady BAN
14 no.6:567-570 '61.

1. Predstavleno akd. G. Nadzhakovym.

S/056/61/041/006/010/0b4
B108/B138

AUTHORS: To Ying Hsieb, Kirillova, L. F., Markov, P. K., Popova, L. G.,
Silin, I. N., Tsyganov, E. N., Shafranova, M. G.,
Shakhbazyan, B. A., Yuldashev, A. A.

TITLE: 8.5-Bev proton-proton scattering

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 41,
no. 6(12), 1961, 1748-1756

TEXT: Continuing previous work (V. B. Lyubimov et al. ZhETF, $\underline{37}$, 910,
1959; P. K. Markov et al. ZhETF, $\underline{38}$, 1471, 1960) the authors studied
elastic proton-proton scattering at energies of 8.5 Bev, using photo-
graphic emulsions of the НИКФИ-БР (NIKFI-BR) type. The primary proton
beam of $(2.01 \pm 0.05) \cdot 10^5$ particles/cm^2 (from the proton synchrotron of
the Joint Institute of Nuclear Research) struck the emulsion
perpendicularly. The emulsion contained $(2.90 \pm 0.06) \cdot 10^{22}$ hydrogen atoms
per cm^3. 354 elastic scattering events (plus 145 of previous work) were
found. The elastic scattering cross section was 8.74 ± 0.40 millibarns.
Conclusions: (1) The mean square p-p interaction radius is

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8.5-Bev proton-proton scattering

S/056/61/041/006/010/054
B108/B138

$(1.15 \pm 0.05) \cdot 10^{-13}$ cm. (2) The departure of experimental from calculated results is three times the overall error. This is due to neglect of the dependence of scattering amplitude on proton spin states, and to neglect of its real part, both of which were confirmed by experiment. However, the real part does not exceed half of the imaginary part. The authors thank V. I. Veksler for his interest, and K. D. Tolstov for collaboration. There are 4 figures, 2 tables, and 11 references: 6 Soviet and 5 non-Soviet. The three most recent references to English-language publications read as follows: G. Von Dardel et al. Phys. Rev. Lett., 5, 333, 1960; A. Ashmore et al. Phys. Rev. Lett., 5, 576, 1960; Y. K. Lim et al. Suppl. Nuovo Cim , 15. 382, 1960.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research). Fiziko-tekhnicheskiy institut AN Uzbekskoy SSR (Physicotechnical Institute AS Uzbekskaya SSR)(A. A. Yuldashev)
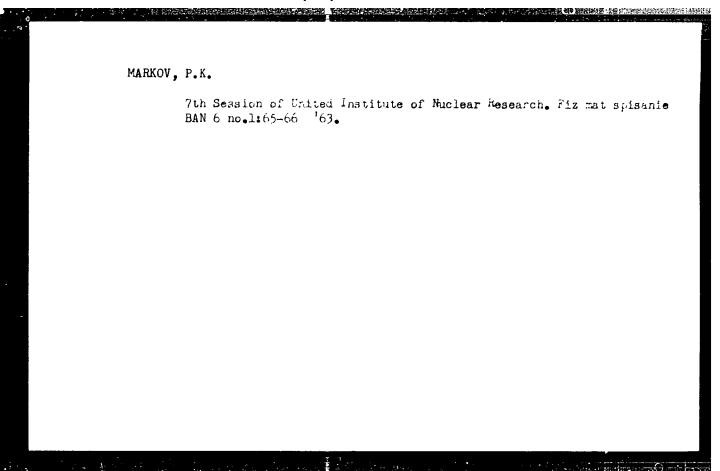
SUBMITTED: June 21, 1961

Card 2/2

MARKOV, Pavel K.

The method of nuclear emulsions and the physics of elementary
particles. Fiz mat spisanie BAN 5 no.3:161-176 '62.

KORBEL, Z.F.; SHAFRANOVA, M.G.; ZLATEVA, A.I.; MARKOV, P.K.;
        TODOROV, T.S.; CHERNEV, Kh.M.; DALKHAZHAV, N.; TUVDENDORZH,D.;
        ZRELOVA, N.N., tekhn. red.

[Elastic scattering of π^--mesons on protons at a momentum
of 4 Gev./c] Uprugoe rasseianie π^--mezonov na protonakh pri
impul'se 4 Gev/s. Dubna, Ob"edinennyi in-t iadernykh issledo-
vanii, 1963. 7 p.   (MIRA 17:1)

1. Institut fiziki i khimii Mongol'skoy Akademii nauk, Ulan-
Bator (for Dalkhazhav, Tuvdendorzh).

MARKOV, P.K.

7th Session of United Institute of Nuclear Research. Fiz mat spisanie
BAN 6 no.1:65-66 '63.

ACCESSION NR: AT4017777   B/2503/63/011/01-/0101/0104

AUTHOR: Zlatanov, Z. M.; Kanazirski, Kh. M.; Markov, P. K.; Khristov, L. G.

TITLE: Elastic scattering of protons by deuterons at small angles at 6.2 GeV

SOURCE: B"lgarska Akademiya na Naukite. Fizicheski institut. Izvestiya na Fizicheskiya institut s ANEB (News of the Institute of Physics and the Atomic Energy Scientific Research Foundation), v. 11, no. 1-2, 1963, 101-104

TOPIC TAGS: scattering, elastic scattering, proton, deuteron, synchrophasotron, photoemulsion

ABSTRACT: The photoemulsion method was used to investigate elastic p-d scattering at 6.2 GeV. A stack, 9 cm in diameter and 2 cm thick, consisting of 29 emulsion layers of the NIKFI-BR type saturated with heavy water, was irradiated by the internal proton beam of the OIYaI /United Nuclear Research Institute/ synchrophasotron at Dubna. The incident beam was perpendicular to the surface of the layers, and had an average density $(4.13 \pm 0.08) \cdot 10^5$ protons per sq. cm. The scanning, the measurements and identification of instances of elastic scattering were performed according to the methodology described by V. B. Lyubimov, P. K. Marko., E. N. Tsyganov, Chzhen Pu-in and M. G. Shafranova (ZhETF, 37, 910, 1959). A total of 140

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ACCESSION NR: AT4017777

instances of elastic scattering were found. The differential cross section obtained is shown in Table 1 and Figure 1 of the Enclosure. The cross section of elastic p-d scattering in the angular interval 1.5^0--7.5^0 c.m.s. was found to be $\sigma = (8.41 \pm 0.73)$ mb/sterad. The screening coefficient of deuteron was found to be 9%. "The authors cordially thank the Directorate of OIYaI /Obedineniya institut za yadreni izsledvaniya; United Nuclear Research Institute/ for the irradiation and chemical treatment of the photoemulsion stack, and M. G. Shafranova for assistance rendered in the work." Orig. art. has: 4 figures, 1 table.

ASSOCIATION: none

SUBMITTED: 00   DATE ACQ: 04Mar64   ENCL: 02

SUB CODE: PH   NO REF SOV: 003   OTHER: 001

Card 2/4

ZLATEVA, A.I.; MARKOV, P.K.; CHERNEV, Kh.M.

Elastic scattering of protons at 6.2 Bev. Izv fiz atom BAN 11
no.1/2:105-120 '63.

L 10237-63   BDS/EWT(m)—AFFTC/ASD—IJP(C)

ACCESSION NR: AP3000036   S/0056/63/044/005/1470/1473

AUTHOR: Zlateva, A. Y.; Kyurkcheva, D. T.; Markov, P. K.; Chernev, Kh. M.   (B)

TITLE: Elastic proton-proton scattering at 6.2 Bev.

SOURCE: Zhurnal eksper. i teoret. fiziki, v. 44, no. 5, 1963, 1470-1473

TOPIC TAGS: proton-proton scattering, elastic, emulsion technique, perpendicular irradiation

ABSTRACT: Elastic p-p scattering at 6.2 BeV was measured by perpendicular irradiation of nuclear emulsions which yields the required information more rapidly than the usual parallel irradiation when the differential cross sections for high-energy elastic scattering is measured at small angles (up to 1° in the center of mass system). The differential cross section was obtained for the 1.3 - 10.5° c.m.s. range. The results, together with the data obtained by thhe authors elsewhere (Zhurnal eksperimental'noy i teoreticheskoy fiziki, vol. 37, 910, 1959, and vol. 38, 1471, 1960), together with the results of Cork, Wenzel, and Causey (Phys. Rev. vol. 107, 859, 1957), cover the broad c.m.s. range 1.3 -
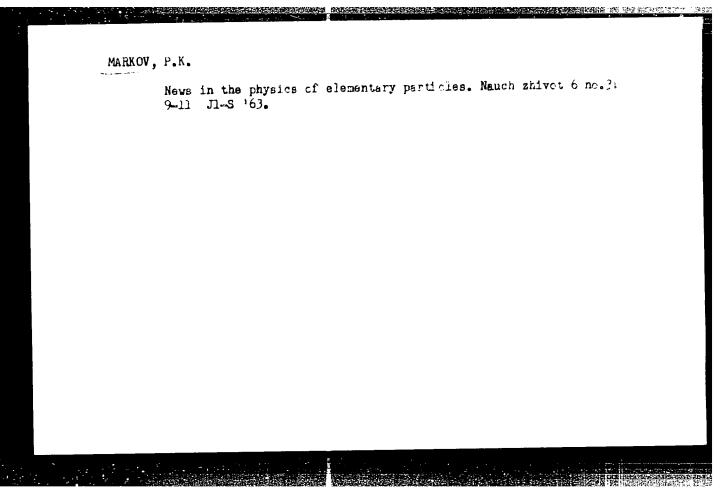
Card 1/2

L 10237-63
ACCESSION NR: AP3000036

5

27.6°, which is of decided interest in the theory of Regge poles. The elastic scattering cross section is 9.8 plus or minus 0.9 millibarns. The experimental results are analyzed on the basis of a quasi-classical model. "In conclusion we wish to thank the directors of the High Energy Laboratory of the Joint Institute of Nuclear Research for the irradiation and chemical processing of the emulsion stacks. We also thank M. G. Shafranova, Ye. N. Tsyganov, B. A. Shakhbazyan, and L. N. Silin for participating in discussions of the results..." Orig. art. has: 1 figure, 3 formulas, 1 table.

ASSOCIATION: Physics Institute, Bulgarian Academy of Sciences

SUBMITTED: 01Dec62   DATE ACQ: 12Jun63   ENCL: 00

SUB CODE: PH   NR REF SOV: 005   OTHER: 007

Card 2/2

MARKOV, P.K.

News in the physics of elementary particles. Nauch zhivot 6 no.?;
9-11 Jl-S '63.

MARKOV, P.K.

Ninth International Conference of Socialist Countries on
High-Energy Physics; Krakow, September 24-29, 1963. Fiz
mat spisanie BAN 6 no. 4:314-316 '63.

DALKHAZHAV, N.; ZLATEVA, A.Y.; KORBEL, Z.F.; MARKOV, P.K.; TODOROV, T.S.;
    TUVDENDORZH, D.; CHERNEV, Kh.M.; SHAFRANOVA, M.G.

Elastic scattering of 4Gev./c mesons by protons. Zhur. eksp.
i teor. fiz. 47 no.1:12-15 Jl '64.   (MIRA 17:9)

1. Ob"yedinennyy institut yadernykh issledovaniy. 2. Sotrudniki
Instituta fiziki i khimii Mongol'skoy Akademii nauk, Ulan-Bator
(for Dalkhazhav, Tuvdendorzh). 3. Sotrudniki Fizicheskogo
instituta i atomnoy nauchno-issledovatel'skoy laboratorii
Bolgarskoy Akademii nauk, Sofiya. (for Zlateva, Markov, Todorov,
Chernev).

L 23460-66 T

ACC NR: AT6004212   SOURCE CODE: BU/2503/65/013/001/0215/0219

AUTHOR: Markov, P. K.; Peeva, A. T.

ORG: none

TITLE: Charge exchange p-n interaction at 6.2 GeV

SOURCE: Bulgarska akademiya na naukite. Fizicheski institut. Izvestiya na Fizicheskiya institut s ANEB, v. 13, no. 1, 1965, 215-219

TOPIC TAGS: nuclear emulsion, photographic emulsion, charge exchange, pn interaction, proton beam, synchrophasotron

ABSTRACT: Using the Dubna Synchrophasotron two nuclear photo-emulsion stacks were exposed to a 6.2 GeV proton beam perpendicularly to the surface of the layers. The upper limit for the cross section of the charge exchange p-n interaction in the region 1.3 - 10.5° cms was determined to be $\sigma_{ch.ex.}$ 0.23 ± 0.06 mb. The authors thank V. Y. Vaksler, director of the high energy laboratory of OIYAI, Dubna, for making available photoemulsion materials.

Card 1/2   Z

L 23460-66

ACC NR: AT6004212

Orig. art. has: 2 formulas, 2 figures, 1 table. [Based on author's abstract]

SUB CODE: 20,18,07/   SUBM DATE: none   ORIG REF: 002/
SOV REF: 002/

Card 2/2

L 24301-66   EWT(m)   DIAAP
ACC NR: AP6006795   SOURCE CODE: UR/0386/66/003/001/0015/0021

AUTHOR: Zolin, L. S.; Kirillova, L. F.; Liu, Ch'ing-ch'iang; Nikitin, V. A.; Pantu-
yev, V. S.; Sviridov, V. A.; Strunov, L. N.; Khachaturyan, M. N.; Shafranova, M. G.;
Korbel, Z.; Rob, L.; Devinski, P.; Zlatanov, Z.; Markov, P.; Khristov, L.; Chernev,
Kh.; Dalkhazhav, N.; Tuvdendorzh, D.

ORG: [Zolin, Kirillova, Liu, Nikitin, Pantuyev, Sviridov, Strunov, Khachaturyan,
Shafranova] Joint Institute of Nuclear Research, Dubna (Ob"yedinennyy institut yader-
nykh issledovaniy); [Korbel, Rob] Czechoslovakian Higher Technical School, Prague
(Cheshskoye vyssheye tekhnicheskoye uchilishche); [Devinski, Zlatanov, Markov, Khris-
tov, Chernev] Physics Institute, Bulgarian Academy of Sciences, Sofia (Fizicheskiy
institut Bolgarskoy akademii nauk); [Dalkhazhav, Tuvdendorzh] Institute of Physics
and Chemistry, Mongolian Academy of Sciences, Ulan Bator (Institut fiziki i khimii
Mongol'skoy akademii nauk)

TITLE: Real part of the pn scattering amplitude in the energy interval 2--10 Gev

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu.
Prilozheniye, v. 3, no. 1, 1966, 15-21

TOPIC TAGS: proton scattering, neutron scattering, scattering amplitude, differen-
tial cross section, deuteron reaction

ABSTRACT: On the basis of experimental data obtained by the authors on elastic pd
scattering in the energy interval 1--10 Gev, and information on pp scattering ampli-
tude in this energy range, the authors determined the real part of the scattering

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L 24301-66

ACC NR: AP6006795

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amplitude by means of an experiment involving registration of slow recoil deuterons from a film target of deuterated polyethylene 0.5--0.6 μ thick. The investigated range of the squared momentum transfer was $0.003 < |t| < 0.2$ $(Gev/c)^2$. Plots are presented of the differential cross sections vs. the square of the momentum transfer and an empirical formula is given for these plots. The value obtained for the total cross section of elastic pd scattering at 6 Gev is several times smaller than that measured by others. In the small-angle region of pd scattering, constructive interferences were observed between the Coulomb and nuclear scatterings. From the obtained real part of the pd scattering amplitude, and from a comparison of the obtained data with earlier measurements by the authors of the pp scattering amplitude of the same energies (ZhETF v. 50, 76, 1966), the estimated real part of the pn scattering amplitude is +0.2, -0.06, -0.45, and -0.40 for 2, 6, 8, and 10 Gev respectively. The small nonzero real part of the pn scattering amplitude agrees with data obtained at CERN (G. Bellettini et al., Internat. Conf on Elementary Particles, Oxford, 1965). Orig. art. has: 2 figures, 3 formulas, and 2 tables.

SUB CODE: 20/   SUBM DATE: 12Nov65/   ORIG REF: 005/   OTH REF: 005

Card 2/2

L 22122-66   EWT(1)

ACC NR: AP6004922   SOURCE CODE: UR/0056/66/050/001/0076/0077

AUTHOR: Kirillova, L. F.; Nikitin, V. A.; Sviridov, V. A.; Strunov, L. N.; Shafranova, M. G.; Korbel, Z.; Rob, L.; Zlateva, A.; Markov, P. K.; Todorov, T.; Khristov, L.; Chernev, Kh.; Dalkhazhav, N.; Tuvdendorzh, D.

ORG: /Kirillova; Nikitin; Sviridov; Strunov; Shafranova/ Joint Institute of Nuclear Research, Dubna (Ob"yedinennyy institut yadernykh issledovaniy); /Korbel; Rob/ Czechoslovakian Higher Technical School, Prague (Chekhoslovatskoye Vyssheye tekhnicheskoye uchilishche);/Zlateva; Markov; Todorov; Khristov; Chernev/ Physics Institute, Bulgarian Academy of Sciences, Sofia (Fizicheskiy institut Bolgarskoy Akademii nauk); /Dalkhazhav; Tuvdendorzh/ Institute of Chemistry and Physics, Mongolian Academy of Sciences, Ulan-Bator (Institut khimii i fiziki Mongol'skoy Akademii nauk)

TITLE: Real part of the pp elastic scattering amplitude at 2, 4, 6, 8, and 10 Gev

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 50, no. 1, 1966, 76-77

TOPIC TAGS: proton scattering, elastic scattering, scattering amplitude, differential cross section, nuclear scattering
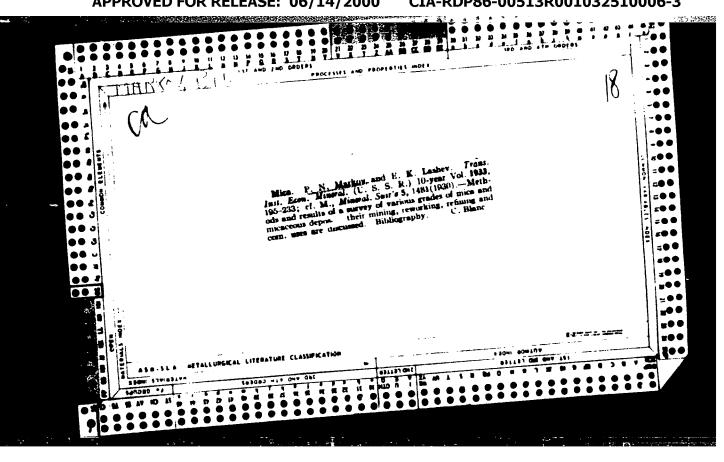
Card 1/2

L 22122-66

ACC NR: AP6004922 O
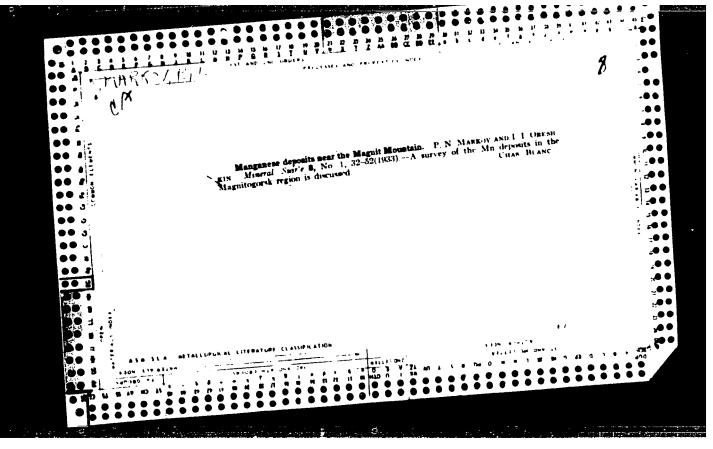
ABSTRACT: This is a continuation of earlier work by the authors (Phys. Lett. v. 13, 93, 1964) in which they present results of the measurements of the real part of the nuclear elastic scattering amplitude for an energy of 4 Gev, and more precise data for energies 2, 6, 8, and 10 Gev, taking into account the relativistic corrections. The experimental technique was described elsewhere (PTE no. 6, 18, 1963). The differential cross section was measured in the interval $0.003 < |t| < 0.2$ (Gev/c)^2 (t = momentum transfer squared). The analysis of the obtained data as well as those reported by others was based on the Bethe formula (Ann. of Phys. v. 3, 190, 1958) with allowance for radiative corrections. The results agree well with the theoretical curve proposed by Soding (Phys. Lett. v. 8, 286, 1963), up to an energy of 20 Gev, above which some discrepancy appears. Orig. art. has: 1 figure and 2 formulas.

SUB CODE: 20/   SUBM DATE: 25Aug65/   ORIG REF: 001/   OTH REF: 008

Card 2/2 BK

Mica. P. N. Markuv, and E. K. Lashev. Trans. Inst. Econ. Mineral. (U. S. S. R.) 10-year Vol. 1933, 195-233; cf. M., Mineral. Soir's 5, 1481(1930).—Methods and results of a survey of various grades of mica and micaceous depns. their mining, reworking, refining and comn. uses are discussed. Bibliography.   C. Blanc

8

Manganese deposits near the Magnit Mountain. P. N. MARKOV AND I. I. ORESH
KIN. *Mineral Swr'e* 8, No. 1, 32-52(1933).—A survey of the Mn deposits in the
Magnitogorsk region is discussed.

CHAR BLANC

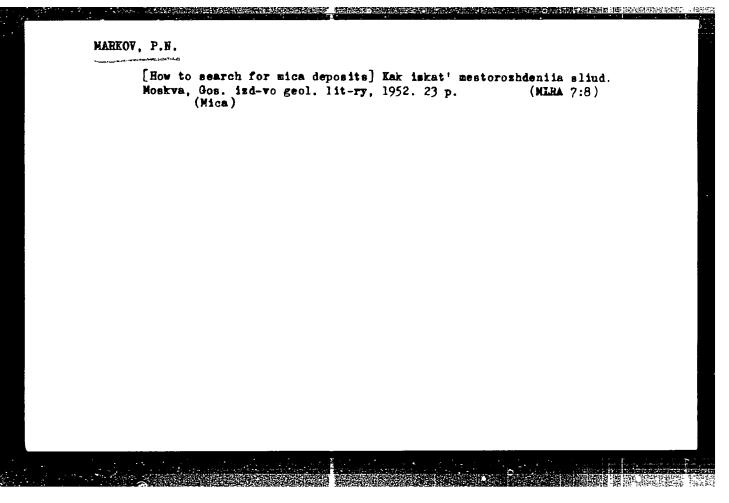METALLURGICAL LITERATURE CLASSIFICATION

MARKOV, P.N.

LASHEV, YE. K., MARKOV, P. N., SULOYEV, A. I.

Geography & Geology

Requirements of industry as to the quality of mineral raw materials. Handbook for geologists--Moskva, Gos. izd-vo geologicheskoi lit-ry. Komiteta po delam geologii pri SNK SSSR, No. 23, Mica (muscovite and phlogopite), 1947.

9. Monthly List of Russian Accessions, Library of Congress, ___October 1 - 2 1953/, Uncl.

MARKOV, P.N.

[How to search for mica deposits] Kak iskat' mestorozhdeniia sliud.
Moskva, Gos. izd-vo geol. lit-ry, 1952. 23 p.   (MLRA 7:8)
        (Mica)

MARKOV, Petr Nikolayevich; MAKSIMOV, A.A., redaktor; GEORGIYEV, G.I.,
tekhnicheskiy redaktor.

[Geological prospecting] Geologorazvedochnoe delo. [Moskva]
Izd-vo Mosk.univ., 1956. 307 p.   (MLRA 10:7)
     (Prospecting)

MARKOV, Petr Nikolayevich; POTAPOV, V.S., red.izd-va; KARASEV, V.A.,
          tekhn.red.

[Prospecting for mica deposits] Kak iskat' mestorozhdeniia
sliud. Izd.2. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po
geol. i okhrane nedr, 1959. 19 p.   (MIRA 13:10)
          (Prospecting)   (Mica)

MARKOV, Petr Nikolayevich; LYUBCHENKO, Ye.K., red. izd-va; SHMAKOVA,
T.M., tekhn. red.

[How to look for mica deposits]Kak iskat' mestorozhdeniia sliud.
Izd. 3. Moskva, Gosgeoltekhizdat, 1962. 19 p.   (MIRA 15:9)
(Prospecting)   (Mica)

SOV/124-57-4-4481

Translation from: Referativnyy zhurnal. Mekhanika, 1957, Nr 4, p 88 (USSR)

AUTHORS: Minskiy, Ye. M., Markov, P. P.

TITLE: An Experimental Investigation of Seepage Resistance in Wells That Do Not Penetrate Fully Into a Reservoir Layer (Eksperimental'noye issledovaniye soprotivleniya nesovershennykh skvazhin)

PERIODICAL: Tr. Vses. neftegaz. n.-i. in-t, 1956, Nr 8, pp 35-65

ABSTRACT: Requirements for the determination of the coefficients of seepage resistance with the aid of physical analog studies are formulated. It is shown that the experiments may be conducted on small models which are geometrically similar to full-scale conditions However, when a process is simulated with gas, the models must be made sufficiently large so as to avoid additional resistance associated with the effect of the compressibility of the gas It is not mandatory that the characteristics of the reservoir be also faithfully simulated. In order to determine more precisely the coefficient of quadratic resistance b in the equation $p_1^2 - p_2^2 = aQ + bQ^2$ (where p_1 and p_2, respectively, represent the pressure in the beginning and at the end of the zone of motion being investigated, Q the yield of the well, and a and b the linear and

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An Experimental Investigation of Seepage Resistance in Wells (cont.)

quadratic coefficients of resistance, respectively). It is recommended that the experiments be conducted over a wide range of Reynolds numbers. The relationship between the linear and quadratic coefficients of resistance was obtained theoretically for wells that are imperfect with regard to penetration, $b/b_0 \cdot (a/a_0)^2$, and for a flow toward a perforated strainer well, $b/b_0 \cdot (a/a_0)^3$, where a_0 and b_0 are the coefficients of resistance of wells which are perfect with regard to both penetration and strainer permeability. These formulas are substantiated by experimental data. Coefficients of resistance of circular openings of various diameters are determined experimentally. The authors recommend that, depending on the presence (or absence) of bottom inflow, the computation of the linear portion of the resistance of an incomplete well be performed with the aid of the formulas by Muskat or Charnyy. The quadratic portion should be computed with the aid of formulas relating the linear and quadratic coefficients of resistance. Diagrams and a description of the experiments performed are presented. Bibliography: 5 references.

I. D. Umrikhin

Card 2/2

MARKOV, P. R.

Baffling and expanding pipes on lathes. Mashinostroitel'
no.12:32 D '62.   (MIRA 16:1)

(Pipe fitting)

2E-4-27/35

AUTHORS: Poletayeva, M.F., Candidate of Technical Sciences, and
Markov, P.U., Engineer.

TITLE: A Manual on Tolerances and Gages is Needed (Nuzhen spravoch-
nik po dopuskam i posadkam)

PERIODICAL: Standartizatsiya, 1957, # 4, p 79 (USSR)

ABSTRACT: The authors point out the lack of a unified special manual
on tolerances and gages. Though the field is covered by the
encyclopedical manual "Machinebuilding" ("Mashinostroyeniye"),
the "Toolmaker's Manual" ("Spravochnik instrumental'shchika")
and other books, such as "A Manual for Tolerances, Fits and
Gages" by Ye.I. Gorodetskiy and "A Manual for Tolerances,
Threads and Gages" by N.M. Shifmanovich and S.P. Afanas'yev,
the calculation methods used in these books differ, particularly
for working gages.
    The best grounded and most comprehensible is the "Toolmaker's
Manual" method for calculation of gage divergence from the
maximum workpiece dimensions. This method conforms closest
to the principle of the tolerance system.
    A special manual containing all necessary data, is needed,

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A Manual on Tolerances and Gages is Needed   28-4-27/35

            in large quantity, to meet the needs of industrial technicians
            and research institutes.

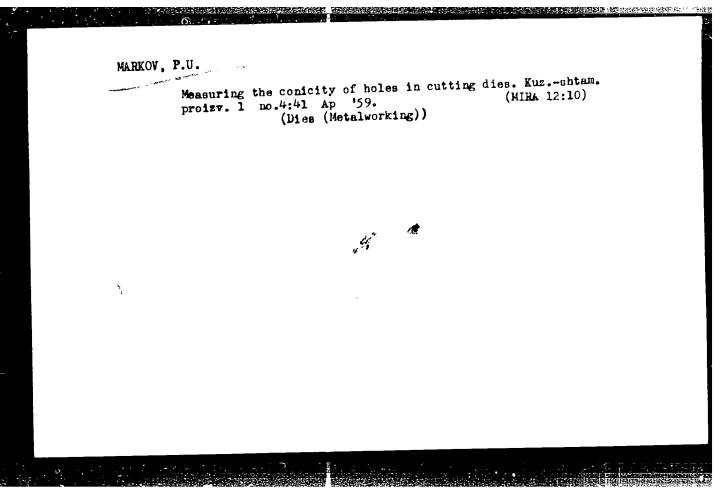ASSOCIATION: Tomsk Polytechnic   Institute (Tomskiy politekhnicheskiy
               institut) and Tomsk Electromechanical Plant (Tomskiy elektro-
               mekhanicheskiy zavod)

AVAILABLE: Library of Congress

Card 2/2

MARKOV, P.U.

Measuring the conicity of holes in cutting dies. Kuz.-shtam.
proizv. 1 no.4:41 Ap '59.   (MIRA 12:10)
            (Dies (Metalworking))

£8(5)   SOV/115-59-3-9/??

AUTHOR: Markov, P.U.

TITLE: The Determination of Harmful Taper on Dies (Oprede-
                 lenie vrednoy konusnosti v shtampakh)

PERIODICAL: Izmeritel'naya tekhnika, 1959, Nr 3, p 15 (USSR)

ABSTRACT: A measuring microscope may be used for checking
                 the direction of taper of the working die openings.
                 The operation is performed simultaneously with
                 passing and reflected light. First, the microscope
                 is focussed on the upper edge of the die opening.
                 and then, without changing the position of the par-
                 the tubus is moved by the height of the opening.
                 If the contour of the lower edge of the die opening
                 becomes visible, then such a die should be rejected.

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· 25(5), 28(1)   SOV/115-59-8-29/33

AUTHOR: Markov, P.U.

TITLE: The Organization of Base Laboratories

PERIODICAL: Izmeritel'naya tekhnika. 1959, Nr 8, pp 59-60 (USSR)

ABSTRACT: The author suggests a system for organizing measuring
             instrument laboratories at large industrial installa-
             tions. In connection with current changes in the
             structure of the Soviet economy, the Byuro vzaimoza-
             menyayemosti Komiteta standartov, mer i izmeritel'-
             nykh priborov (Bureau of Interchangeability of the
             Committee of Standards, Measures and Measuring Ins-
             truments) worked out recommendations for establishing
             repair and maintenance bases for measuring instru-
             ments in economic districts. The author disagrees
             with some of these recommendations. For performing
             repair and maintenance on measuring instruments, the
             author suggests setting up BILs (BlL - bazovaya iz-
             meritel'naya laboratoriya - base measuring laborato-
             ry) at large machinebuilding plants where the nece-
             ssary personnel and facilities are available. The
             BIL should perform maintenance and repair work on
Card 1/3   measuring instruments of a number of smaller indus-

The Organization of Base Laboratories   SOV/115-59-8-29/33

trial installations. A BIL will be partially under
the supervision of the director or the chief engi-
neer of the installation at which they are organized
and the industrial-technological department of the
respective sovnarkhoz. The author suggests a sys-
tem for financing a BIL. Industrial installations
which depend on the service of a BIL must submit
lists of their measuring equipment, indicating appro-
ximately the amount of repair and maintenance work
to be performed within one year. Based on this in-
formation, a work schedule is compiled and submitted
for approval to the sovnarkhoz directorate of machi-
nebuilding plants. After completing the scheduled
work, the different plants, for which repair and
maintenance work was carried out, are charged by the
BIL on behalf of the plant at which the BIL is ope-
rated. Compensations for consultations or advice
may be made in direct payments to the plant at which
Card 2/3   the BIL is organized, or may be included in the fees
             for maintenance and repairs. In the author's opinion,

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The Organization of Base Laboratories

such an organization is more realistic and economi-
cal. The employees of a BIL should have at least
secondary school education and should receive
monthly wages, whereby the control of individual
work norms is eliminated. At the Tomskiy sovnarkhoz
a BIL was established at one of the machinebuilding
plants according to the principle recommended by
the author. Finally, the author states that the ma-
nufacture of spare parts for measuring instruments
at specialized plants would simplify the work of the
measuring instrument laboratories and provide a re-
gular spare part supply to the sovnarkhozes.

Card 3/3

MARKOV, P.U.

Organizing plant and base laboratories. Izm.tekh. no.8:57-58 Ag '60.
(MIRA 13:9)

(Tomsk--Testing laboratories)

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S/115/61/000/010/004/005
E198/E135

15000

AUTHOR: Markov, P. U.

TITLE: Inside measurements of small lengths by means of an optical indicator

PERIODICAL: Izmeritel'naya tekhnika, no.10, 1961, 16-17

TEXT: The problem of measuring small apertures with high accuracy has been investigated by the Optiko-mekhanicheskaya laboratoriya (Optical and Mechanical Laboratory) of the Tomsk Sovnarkhoz in connection with the use of ball bearings. For this purpose they applied a horizontal optical indicator with specially adapted brackets (Fig.1) since the original ones could not be used for inside measurements of lengths below 13 mm. The position of the bracket legs when measuring an aperture of 2 mm diameter is shown in Fig.2, with the little balls set in them touching the walls from inside. The best material for the construction of the brackets was found to be spring steel of the hardness HB = 250. Heating the leg is not advised as this lowers the firmness of the grip on the little ball, which seems to be essential for the accuracy of the measurements. Clamping small gauge bearing rings

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Inside measurements of small lengths ·· E198/E135

on the table of the instrument was very difficult and a specially
prepared clamp, shown in Fig.3, had to be used. For measurement
of apertures of 1.5 mm diameter the above method appeared to be
inadequate as in this case the brackets were not rigid enough.
The measurements were therefore made in two steps, using a special
clamp with cut off edges and cut in notches, secured between two
measuring jaws at a distance   C (Fig.4).   Then the distances   A
and   B   were measured in the ordinary way.   The required internal
diameter was equal to: D = A + B - C.   The dimensions of the
cross-section of a bracket leg are shown in Fig.5.   Calculations
made in the laboratory, as well as experimental data have shown
that the methods described above permit measurement of small
apertures down to 1.5 mm diameter with an accuracy to 0.5 u.
[Abstractor's note: Abridged translation.]
There are 5 figures.

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